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ABSTRACT

The essential nature of the relationship between patterns of education and development implies a causal connection between education and unemployment. Potentials for improvement of employment opportunities and participation in economic growth, together with potentials for improvement of the relevance of education and training to development, are examined. Several aspects of economic planning and institutional arrangements should be scrutinized if progress is to be made in improving the articulation from school to work. Today's society, with its lack of synchronization among economic progress, educational aspirations, intra-education objectives, world-of-work needs, employment opportunities, and financial resources available to education, poses the need for new appraisals and new solutions to link education to development and development to education. Educators must create and staff a strong capability for self-examination, for research and development, for appropriate innovation, and for implementation of innovations which demonstrate a utility in meeting education's imperatives. (Author/SHM)

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EDUCATING FOR DEVELOPMENT

by

William J. Platt[1]

The pathology of the relationship between education and development is sometimes easier to see than the health. The term "educated unemployed" implies some kind of causal connexion between education and unemployment. And yet the educated unemployed often coexist with shortages of manpower critically needed in development, such as public health workers, entrepreneurs, construction workers, agricultural extension agents, surveyors, diesel engine mechanics, family planning advisers, refrigeration technicians, science teachers and others. When these symptoms of maladjustment are combined with the universally mounting costs of education[2] there is a risk that public officials and their constituents will become disenchanted with education as one of the key components of development strategy.

In appraising educational progress in the first development decade we know "the growth of educational opportunities has been dramatic and has broadened the horizens of millions of people"[3] and yet at the same time that extrapolations of existing educational patterns will be neither feasible nor adequate in the 1970s.[4] The Unesco Report Educational Planning states: "Despite spectacular educational expansion, hundreds of millions of the world's children - whether in school or not - are still not getting the education they need and can profit by. And millions of adults - workers, farmers, mothers, professional people - are not yet getting the special training, the updating and improvement, or the change for literacy which they need to raise their productivity and welfare".[5]

What is the outlook for the relationship between education and development in the Second Development Decade? Can the prospects for the health, as well as for the pathology of the relationship, give indications of directions to be pursued? While our knowledge on this score is far from complete the general line of a useful prescription can be discerned. It is to fashion the mutual adjustments of both education and overall development strategies to the ends of increasing employment opportunities and participation in

(1) William J. Platt joined Unesco Secretariat on 1 January 1970 as Director of the Department of Planning and Financing of Education. Former Director, Human Development Research, Stanford Research Institute (1949-1969), he also served as consultant to the International Institute for Education Planning.

(2) A Unesco study found that the percentage of national income spent on education in a sample of developing countries rose from 1960 to 1965, from 2.9 per cent to 3.8 per cent. (Edding and Berstecher, International Developments of Educational Expenditure, 1950-1965, Unesco, 1969, page 23).

(3) Lester B. Pearson, Partners in Development, Praeger, New York, 1969, page 43.

(4) See P.H. Coombs. The World Educational Crisis, Unesco/IIEP, 1967.

(5) Educational Planning, A World Survey of Problems and Prospects, Unesco, 1970, page 10.

economic growth on the one hand and improving the relevance of education and training to development on the other hand. Some potentials for improvement in each of these two facets of the relationship are discussed below. Those relating to adjustments in overall development programmes and institutions are discussed in the first section; adjustments within education are treated in the second section.

I

The educated unemployed

First, the issue of the educated unemployed should be put in perspective. Much of the growth of this unemployment is simply the conversion of disguised unemployment and underemployment, often in rural areas, into visible unemployment. This can be counted because now literate job seekers register at employment exchanges in urban centres.

With unemployment more conspicuous, policy makers have to ask whether they prefer educated unemployed or uneducated unemployed. Although this is by no means the full choice they face, isn't it probable that for individuals and for society as a whole the development options associated with a labour force which has growing education attainments are wider than those associated with a labour force of static or declining educational attainments? Nevertheless, education's relevance to development must be improved, as will be discussed in a later section.

In many developing countries the economic growth rate in the modern sectors, while leading the economic growth rates of the nation as a whole, is not accelerating nearly as rapidly as the out-turn of students from higher education and secondary schools. In this respect it is perhaps as justifiable to say that the amount and nature of economic development are not keeping pace with education's production, as it is to say that education has outpaced economic development.

In many developing countries education is viewed as a one-way ticket into high-status, urban employment. Yet in early stages of development, the capacity of medium and large-scale private enterprises to offer employment to secondary-school and university-trained personnel is quite limited. (In part, this limitation can be traced to a predisposition of employers to use technology that is more capital-intensive than it need be). The rapid expansion that characterized the recent growth of civil service employment in these countries is now having to slow down in view of fiscal realities. The growing supply of job-seekers for high status positions and the limited number of openings can lead only to rising frustration. High rates of population growth in the developing countries during the last two decades compound the problem.

The remedies will not be easy to find or implement. A comprehensive search must be made for the national and regional development policies which will expand productive employment. The International Labour Organisation is taking leadership in a World Employment Programme to assist Member States in this search. Unesco and other Specialized Agencies of the United Nations are co-operating fully in the effort. Possibilities for improvement include

modernization of the rural areas and other intermediate economic sectors, and a variety of adjustments in economic programmes to adapt them better to the human side of development.

The rural transformation

Until recently development officials, including those in the education sector, have underrated the importance of rural transformation in the larger context of development strategy. Rural transformation refers to a comprehensive and interrelated set of changes that include not only increases in the productivity and output of agriculture and livestock, but also the emergence of differentiated economic activities such as food processing, storage and marketing; the provision of agricultural credit; the reform of land tenure; the organization of co-operatives; village and community development programmes to improve water supply, roads and sanitation; services for supplying fertilizers, seed, and insecticides; distribution and repair services for implements and farm equipment, and many other changes that mark the shift out of subsistence agriculture.

Fortunately the neglect of the rural potential has been interrupted by the dramatic "Green Revolution" - the discovery and use of the high-yield varieties of wheat, rice and corn - major food staples in much of the developing world. The adoption of only the physical technology of the Green Revolution by no means assures that the benefits will be shared widely in a genuine rural transformation. A few landowners may realize all the gains. Perhaps the significance of the new varieties of seeds, however, is that in many areas there is now a basis for viability in agricultural development, where only a continuing food deficit was the prospect before. Thus the opportunity now exists in many countries for a successful rural transformation planned and implemented with full attention to the human side of development, namely, the considerations of employment, training, and education.

Education ought to have a more instrumental rôle in contributing to the now more optimistic rural transformation than it has sought or been accorded in the past. Certain technical manpower, like agricultural extension agents or research specialists, clearly require particular educational attainments and technical proficiencies. But farmers themselves must acquire expertise of a higher order than required in traditional methods of cultivation. Their readiness for the new methods will depend in part on the quality and amount of preparation they have received (or can receive) in schools. The many employment opportunities in activities ancillary to agriculture also need to be filled by people with a good general education supplemented by on-the-job or other specialized training.(1) However, the absorptive capacity of the rural labour market will have to be expanded. Note here a finding of the Pearson Commission, which reported to the World Bank:

> "Improvements in primary education or diversified education at the secondary and university levels will not be of great service to the youth of (developing) countries if the agricultural system and the absorptive capacity of the labour market are not revolutionized."(2)

(1) For a comprehensive discussion of rural education see Prospects in Education, "Rural Education", Bulletin n°2, 1969, Unesco.

(2) Lester B. Pearson, Partners in Development, Praeger Publishers, New York, Washington, London, 1969, page 68.

Other intermediate sectors

There would appear to be unrealized potential for manpower of middle and high educational attainment to contribute to national development by working not only in the rural transformation but also in other intermediate economic sectors, that is, in those sectors between subsistence agriculture and the modern industrialized sectors. Such activities include modern small industry and service enterprises, the improvement of public health and nutrition, the expansion of education and training, self-help projects to improve the infrastructure of secondary roads and small scale public works, and others. All these activities are relatively labour-intensive, requiring organizers, leaders, innovators, supervisors, technicians, all of whom need appropriate secondary or higher education, or their equivalent.

The problem of motivating and preparing the educated unemployed into the mobilizations just mentioned is a formidable one, particularly in the light of differential attitudes toward occupations, and toward acceptable or desirable kinds of work. No doubt some attitudes are culture-based, i.e. deeply ingrained in family-transmitted values that will not yield easily to modification. The differences among cultures in what McClelland calls "need for achievement"(1) provide insights into how work orientations are or are not formed in the home, even through the telling of nursery folk tales. But it would appear that values imbedded in the content and method of instruction in schools and training institutions also have an influence on work orientations, on the willingness to become entrepreneurs, and on the relative status which students and trainees accord various occupations. As will be discussed in section II, curriculum content should be reformed to allow students to form realistic perceptions of the world of work. And economic incentives for channeling the energies of the educated unemployed into neglected sectors have generally not been used imaginatively.

Adjustment of economic programmes to human development potentials

Educational officials have been expected by most economic development planners and officials to proceed from the premise that education should be geared to, and made consistent with overall economic development programmes: that education should react to, but not shape economic goals. Perhaps a more appropriate attitude is an emerging one which holds that the processes of educational and economic goal-setting should be more nearly those of mutual adjustments.

A number of factors may account for the changing conception of the appropriate relationship between economic and educational programmes. First, earlier economic development planning, with its preoccupation with the single criterion of growth in national economic product, is beginning to comprehend social development objectives such as distributive justice (reduction in income and social inequalities), the maximization of employment opportunities, and the correction of injustices or lack of opportunity of various minority groups. Education has a rôle to play in attaining these

(1) David C. McClelland, The Achieving Society, D. Van Nostrand Company, Ind., Princeton, New Jersey, 1961.

social objectives. Second, there is a growing acknowledgement that education confers important values that appear to defy translation into economic indicators. And finally, education has become one of the largest enterprises in most nations, comprehending all the interest groups, particularly the youth, who have a stake in national economic and social development.

In attempting to apply the concept of mutually adjusting economic strategies and educational programmes, policy-makers can consider the following, among other possibilities:

1. A country's or a region's present or projected manpower structure, defined in particular types and levels of educational attainments and in particular interests and proficiencies, may suggest a comparative economic advantage rooted in human resources in the same sense that physical resource endowments suggest patterns of comparative economic advantage. This line of reasoning might lead certain countries or regions to investments in such sectors as tourism, or certain types of modern small-scale industry, or food or livestock processing, or others based on particular human aptitudes.

2. Unemployment and underemployment may be traceable in part to rigidities and obstacles that prevent the labour market from functioning well. Efforts should be made to remove such obstacles as arbitrary job entry requirements, irrelevant formal educational qualifications, distortions in wage and salary structures unrelated to relative productivity, or hindrances to geographic or occupational mobility.

3. An approach to help meet intermediate-range development needs is that of first conducting surveys of unemployed members of the labour force on a district or area basis, obtaining information on skills, educational attainments and interests. Particular attention should be given to inventorying younger members of the labour force, including early school leavers, because a second step is to establish those short training courses, including the necessary remedial education, which will improve the preparation of the trainees for employment. This training activity must, of course, be closely articulated with employment-generating programmes and with technical and financial aids to the creation of small business.(1)

These and other aspects of economic planning and institutional arrangements deserve scrutiny if progress is to be made in improving the articulation from school to work.

(1) For a discussion of the developmental rôle that can be played by small-scale modern entrepreneurship, see Eugène Staley and Richard Morse, Modern Small Industry for Developing Countries, McGraw-Hill Book Company, New York, 1965.

II

The imperatives education faces for the 1970's - i.e., growing social demand multiplied by demographic pressure; a tightening economic squeeze that results from hitting budgetary ceilings while unit costs continue to rise; growing maladjustments of educational systems to their environments; and growing discontent of youth with educational offerings and with their opportunity to participate in shaping educational structures - all these imperatives call for education to undertake major structural and institutional changes. In the compass of this paper it is possible to sketch out only a few of the adjustments those concerned with educational governance must consider.(1)

Perhaps the unifying theme of the reforms that education must make is that education must create and staff a strong capability for self-examination, for research and development(2), for appropriate innovation, and for implementation of innovations which demonstrate a utility in meeting education's imperatives. In short, the only way to search for education's needed breakthroughs is to experiment and to evaluate those experiments - to try out new learning systems in and out of formal school settings - to set aside impediments to change, such as examination systems which reward rote memory instead of ability to solve development problems. This does not mean innovation which is promiscuous, but rather innovation directed toward relevance in development, toward the liberation of talent and intellect, toward social and economic justice, and toward participation of all those who have a stake in the educational enterprise.

With these perspectives, where do some of the priorities for educational adjustment lie? Perhaps the beginning is a re-examination of the purposes of education. From that can follow the laying down of lines of strategic planning tailored to a country's unique needs and resources. Next can come an attempt to redesign learning systems at the micro or classroom level. Then the several educating agents available - schools, mass media, the family, training institutions, employing establishments - can be convened so that each can be allocated the portion of the educational task suited to its comparative advantage. Finally, there can be an exploration of how external assistance can supplement local effort in implementing needed reform and restructuring. This, then, is the general line of the remaining discussion.

Education as preparation for performance

A strategy is essential when ends are sought with limited resources. In education the evolution of a strategy is often handicapped by lack of clarity of ends or objectives. The topic of this paper deals with the relation between the preparation which youth and adults receive in school and their ability to participate in economic and social development. But such participation is not the only end or rôle for which students are preparing

(1) For an additional discussion of this subject, see Educational Planning, a World Survey of Problems and Prospects, Unesco, 1970.

(2) For a review of research needs, see William J. Platt Research for Educational Planning, Notes on Emergent Needs, Unesco/IIEP, 1970.

themselves in school. Various classifications of these rôles can be proposed, but perhaps some of the necessary diversity is suggested if one takes the view that education is preparation, (1) for citizenship; (2) for economic activity of some kind; (3) for social participation; and (4) for self-realization, including in the arts and in the pursuit of knowledge for its own sake.

Among the rôles to which educational institutions are geared, that of preparation for economic activity might appear to be of primary interest from the standpoint of educating for development. Nevertheless the other rôles of man cannot be separated out nor neglected; they also contribute to development. For example, the professional administrator of economic activities will also need to be well prepared in social participation; and the entrepreneur, so critically needed for generating employment opportunities, should have acquired proficiency in creativity and self-actualization; and so on. But there may be some value in concentrating on how education can better prepare for the economic rôle, all the while acknowledging that society holds education responsible for other preparations as well, and that these other preparations contribute to performance in economic activity indirectly, if not directly.

Educational and training institutions jointly, and whenever possible in co-operation with employing establishments, should help students acquire the skills, attitudes and values which will enable them to initiate and adjust constructively to the changes which are both conditions and consequences of development. Within these broad purposes, specific objectives for education or training must be drawn up in terms of intended student outcomes. In so far as possible educational objectives should be specified in behaviour terms, that is, describing what the student will do when he demonstrates his mastery of the objective. For example, a student can demonstrate mastery of certain units of science instruction when he is able to make accurate observations, when he can classify these observations into useful groups, when he can measure phenomena he observes, when he can draw inferences from his observations and analyses, when he can devise experiments which will test the validity of his inferences.

Education sector planning

At the national level there is a need for the formulation of a multiyear strategy for the entire educational sector linking it to the overall economic and social development plan. This strategy should take account not only of employment prospects as they may be influenced by the economic development plans, but also of the ways in which interests, proficiencies and other comparative advantages in human resources can help shape such economic programmes, as has been discussed in section I. The resulting projected manpower structures can be translated into the general blocks of educational and training capacities which will generate the flows of persons who will find employment, but this translation requires that considerable caution be exercised in the estimation process. It must be emphasized that manpower planning is a complex task which in most developing countries is further complicated by the inadequacy of existing data and the difficulty of securing additional needed data.

A first caution to be observed in planning education to meet manpower needs is to recognize the considerable, but by no means unlimited, substitutability of skills and of educational attainments which characterizes the relationship between a given occupation and the education appropriate therefor. The general lines for dealing with the substitutability question have been anticipated above, that is, preparation requirements should be stated in terms of student performance objectives - i.e., in some kind of observable behaviour which will demonstrate appropriate competence for the occupation or sub-occupation. In short, it is not enough to specify educational coefficients in terms of diplomas, certificates, or years of educational attainment, since performance objectives may be met by a job applicant prepared through on-the-job experience, out-of-school courses, or self-instruction, as well as by in-school preparation.

A second caution is to allow for the need of a gradually rising base of general education as a necessary accompaniment of development. General education provides the grounding for trainability, for retrainability, in fact for self-renewal. The requisite amount of general education varies in time and with the complexity of the socio-economic environment in which the job-holder works. For example, in a dynamic industrial firm or a research organization, even stenographer-secretaries may need to have completed higher education. Only with that level of general education will they have the versatility and awareness necessary for high productivity. In any case, educational planning should allow for an underlying secular trend toward more and more general education for all who expect to be economically active.

A third consideration is to plan for educational experience to be available throughout one's working career, and not just available to youth prior to employment. The concept of lifelong continuing education is discussed in another paper of this IEY series. Here it is necessary only to emphasize the utility of multiple entry and re-entry points into schooling and of interludes of work and study, since these contribute both to individual self-realization and to economic productivity.

Lifelong continuing education need not necessarily mean adult education offerings which are net additions to the amount of education previously offered only to youth. If resources are severely limited, the concept may also be applied by redistributing in time an individual's educational opportunities. Here the notion has been advanced that each individual citizen of a country might have a right to some specified amount of free public schooling during his lifetime which he can take at any time he wishes. If the offerings were appropriately adjusted to be challenging to students of a variety of entering or re-entering ages, this arrangement might produce large savings in drop-out and repetition rates. Further, students would be able to exert a more constructive influence in making education relevant to development, since their work interludes would have established interests and motivations for obtaining useful preparations in school.

Once information on flows from schools to employment is available, there is also a need for strengthening counseling activities and for adjusting incentives, both to help attract students to prepare themselves for the growth occupations. Some of the incentives that will need to be applied are monetary - wage or salary differentials - and others relate to status and

image. While sensitive counseling and perhaps long-range efforts may be required to modify attitudes toward status differentials, government policy can be reflected fairly quickly in wage and salary structures for government employees. As a major employer, the government can have an influence on all wage and salary differentials by establishing structures whose incentives recognize development needs.

Educational value added

Each educational process should add value to the learner. Thus at the micro or school level educators must plan and account not only for the absolute performance (degree of mastery) a learner has attained, but also for the gain, or increment in performance between the learner's entering, or pre-process performance, and his exiting, or post-process performance. The appropriate measure of performance will of course depend on the objectives of the particular educational programme being undertaken. The measure might be an increment in achievement scores, a reduction in problem-solving time, an increase in the number or complexity of concepts that the learner can apply, an improvement in calculating accuracy, an enlargement of a foreign language vocabulary, even an improvement in self-image! Educational value added can and should apply to an individual or to a group taking a course, a cycle such as primary or secondary education, or a combination of cycles leading, for example, to a degree or diploma.

When educators accept a responsibility for helping learners improve their own performance according to the concept of educational value added, a number of implications follow. One is the need to know with some precision the entering, or pre-process, capability of each student - in short, a diagnosis of his abilities and needs. Only with such a calibration can educational offerings for imporved performance be planned and evaluated. Most educators neglect pre-measurement even though they require examinations for post-measurement. The use of post-measurements only does detect individual performance or achievement differences, but these variations can just as well be attributed to socio-economic background variables or to other preconditions as to the effects of the educational experience under study. The diagnostic test is important not only for establishing the base line against which value added can be measured, but also for tailoring educational offerings as much as possible to individual needs.

A second implication is the need to improve the science and art of measuring educational outcomes relative to an expanding and more pluralistic set of educational objectives. Existing ways of evaluating cognitive achievement, social behaviour, self-awareness, and other goals of education are not adequate for the more finely tuned assessments needed to measure increments of educational value added.(1)

(1) For a description of the state of the art in educational tests and evaluations, see Bereday and Lauwerys, The World Yearbook of Education, Examinations, Evans Brothers Limited, London, 1969.

It would be easy to use the concept of educational value added in designing development-oriented education if handbooks were available which gave the expected performance increment that students with particular entering characteristics should achieve if particular curricula and methods were used. If information of this type were at hand, educators could choose the sequence, the content and the method feasible with available resources.

Unfortunately, the technology of education is not yet that systematic. But the inadequacies need not lead to despair in using the concept. Every school system can be viewed as a rich environment for determining these data empirically. Given the will to experiment and to keep track of results, school officials can begin the accumulation of information linking actual performance and achievement increments with various types of instructional programmes. If the instructional programmes can be systematically varied for various types of students, so much the better in terms of generating a handbook that offers wider choices. In any case the important notion is that school operations do provide an empirical laboratory for accumulating at the local level data useful in planning for educational value added.

Effectiveness and cost

Educational and training programmes, like other development efforts, will increasingly be required to prove their worth by the criteria of the relationship between effectiveness and cost, or between benefits(1) and cost. Education must compete ultimately with other development sectors like agriculture, public health and transport, for which increasingly good development rationales are being presented. Thus educators must equip themselves with the analytic tools for keeping track of the costs of educational courses, programmes and institutions along lines that will permit valid comparisons of these costs with educational outcomes. Having accumulated costs in this way, educators can draw directly on the above-described measures of value added by education to express the effectiveness component in the criterion of effectiveness-cost. Much work is now under way to analyse cost and effectiveness of education and training. Although progress is being made, much more work is required to produce generally applicable methods.(2)

Unfortunately the articulation of objectives, the planning of appropriate units of educational value added, and the evaluation of outcomes in performance terms is seldom practised in education. Until these practices are more wide-spread we cannot expect education to be very relevant to development.

(1) A frequently-employed distinction is that benefits are those outcomes whose value can be expressed in monetary terms, whereas effectiveness deals with all outcomes, including those which do not necessarily have to be converted to monetary values.

(2) See the discussion on measuring indirect and nonmonetary benefits of education and "Strengthening Educational Evaluation" in William J. Platt Research for Educational Planning, Notes on Emergent Needs, Unesco/IIEP, 1970.

Intra-education objectives

Scrutiny at the micro level will often reveal that schools are guided by implicit, more than by explicit, objectives. And most of the implicit objectives, when analysed, will be found to relate not to preparation of the learner for performance in the world outside the school, but rather only for preparation for more schooling! If the additional schooling is ultimately relevant to development, and if a reasonable number of students complete the entire sequence, the dominance of such intra-education, or academic, performance criteria is not necessarily a problem. Unfortunately, education is seldom very relevant to development and only a tiny percentage of those entering schooling does indeed complete the entire sequence.

At present intra-education objectives in many systems are out of synchronization with needs in the environment. For example, half of the secondary students in Rwanda are studying Greek and Latin. This is no doubt a case of intra-education objectives borrowed from someone else's system, where intra-education objectives may now also be irrelevant to environmental needs. And poor synchronization can as easily be home-grown as borrowed. Note, for example, the tendency for most examinations, even at so-called terminal points in an education structure, to place main stress on testing for admission to the next higher educational cycle instead of testing for ability to perform in the world outside the classroom. The only remedy for the common ailment of a disproportionate emphasis on academically-oriented performance norms is to subject all school objectives to the critical scrutiny of relevance to preparation for performance in the changing world beyond the classroom.

Schooling for success, not failure

Despite a growing acceptance of the notion of education as an instrument for maximizing self-realization, schooling in developing countries and some developed countries is still guided by an élitist conception which defines educational success narrowly only for those who manage to proceed through the academic stream and to complete higher education. Schooling under that conception provides a screening function, selecting out (i.e. "failing") many more students than it allows to pass on. A disinterested observer of such a system might conclude that an overall implicit purpose of such schooling is more to produce failures than it is to prepare the minority of students for the success of further schooling. A more liberal view is that a purpose of all schooling is to produce successes, albeit highly differentiated successes. Schooling for success implies formulating plural objectives and organizing each educational sequence so that it adds value for the learner in the sense discussed above.

Education agents other than the school system

The formal school system is only one of the agents by which youth and adults are prepared for rôles in which they can participate in society. Fortunately other agents share in the preparatory task: the family; a great variety of social groups such as youth clubs and other associations; out-of-school organized training institutions; mass media of communication (radio, TV, newspapers, books, records); churches; and enterprises (farms,

commercial firms, industrial organizations, government agencies). Each of the foregoing agents contributes, or has the potential to contribute, to the educational process. The formal school cannot be expected to do the entire job.

Certain agents seem to have comparative advantage in adding particular kinds of educational value, for example, the family in forming attitudes and values; social groups in teaching social participation; the formal school system in providing skills in communication and computation and in learning how to learn; training institutions in providing job entry skills; the mass media in offering ready access to knowledge and information; the employing establishments in perfecting proficiencies and applying them in useful production; churches in religious education and moral values. If the workload among the educating agents is distributed according to the comparative advantage of each, the principle of economizing on scarce resources will be observed. But if one or more agent is weak or missing, human development potentials go unrealized.

All to frequently the formal school system is depended on as the residual agent, being expected to add particular types of value best performed by another of the educating agents. For example, a common error is the expectation that formal schooling can perform well in vocational job-entry training. In some cases it can, particularly when the schools have established good links with employing establishments. But more often school-based vocational training is both expensive and ineffective. Job-entry training should, wherever feasible, be conducted within, or in close co-operation with the prospective employing organization. Vocational training, requiring as it does the equipment of the workplace (or simulators thereof) and specialized instructional proficiency, is considerably more expensive per student-day than is general education. Accordingly it should be provided only under those circumstances which will minimize the waste of drop-out or lack of opportunity for job placement.

A close co-operation between training institutions, schools, and employing establishments is necessary to achieve effectiveness in training. This may take the form of modern apprenticeship where basic training is given in a training institution and the bulk of further practical training occurs in the co-operating employing establishment. Then while employed, the apprentice continues to receive related theoretical instruction in a vocational school on a day or block-release basis. Another form of organizing training is the sandwich system where periods of training at a vocational or technical school alternate with periods of training on the job.

Orientations toward the world of work

None the less the formal school curriculum itself should be expected to help students form desirable and realistic orientations toward the world of work, including understandings of what people in various occupations will do and what they will need to know. These orientations are best acquired in formal schooling in the form of substantive material or work-study arrangements integrated into curricular sequences on the physical, biological and social environment. These understandings can be extended and made motivating by the provision of occupational counselling services.

Orientations toward the world of work, as just described, combined with general education in which the emphasis is on inquiry and problem-solving instead of knowledge-acquisition, should produce trainable people. The trainable, i.e., those who can learn and relearn on the job, will be able to adapt to the changes that are inevitable in the dynamics of modern working careers.

Those responsible for education in a developing country should bring together representatives of the several agents which need to collaborate in the educational process. With appropriate preceding staff work, such a convocation could block out educational goals more clearly. Having done so, it could then distribute the educational tasks according to which educational agent has comparative advantage for each task.

External aid

Educators in developing countries will find that local resources in funds and personnel are insufficient for planning and implementing the kinds of educational adjustments and reforms discussed above. Fortunately a great variety of outside assistance can be drawn on from bilateral and multilateral governmental sources, from international institutions like the World Bank, and from private sources like churches, foundations and multinational business firms.

A well-prepared and detailed local plan can assure that external aid, integrated into the plan, will serve national objectives and priorities. A number of institutions stand ready to assist in planning. Recipient country nationals, for example, can be trained at one of the four regional centres for educational planning in which Unesco participates, or at the International Institute for Educational Planning. In addition, on request Unesco provides resident expert advisers in educational planning; some 40 experts are now at work in 35 countries. Unesco is further strengthening its capability to assist developing countries in preparing overall education sector plans tailored to local objectives and to the outlook for local and external resources. In this effort Unesco is co-operating with the World Bank and with regional development banks and centres.

Once priorities have been established within sector and national plans, projects and programmes must be identified and prepared for funding and implementation. Here again outside help can be called upon. Unesco, in co-operation with the United Nations Development Programme, with the World Bank, and with other funding sources, assists in these processes and in providing the technical assistance needed to make the projects operational and to integrate them into the national education system. Unesco can assist in exploring innovations in curriculum, teacher training, science instruction, the use of new media and lifelong educational structures. And Unesco can also assist in matching local needs with the considerable variety of external sources of funds, including even assistance in organizing consortia of potential donors.

Throughout the agencies which channel external assistance to education in developing countries there is a growing conviction of the need for all members of the development partnership to seek new solutions to the intractable imperatives of the Second Development Decade. This conviction will provide encouragement for those educators in developing countries who are committed to innovation and reform and who can articulate plans, programmes and projects which move education toward a greater relevance to development.

III

Conclusion

The situation at the beginning of the Second Development Decade, with its lack of synchronization among economic progress, educational aspirations, intra-education objectives, world-of-work needs, employment opportunities, and financial resources available to education, poses the need for new appraisals and new solutions to link education to development and development to education. In part our lack of knowledge of a more mutually reinforcing relationship between education and development arises from our not having treated education as a purposive system designed to add increments of learning and performance capability for each student. Learning systems now need to be so designed and evaluated. To do so, educational objectives will have to be clarified and made more pluralistic, education sector strategies will have to be formulated, innovation and experimentation at the school level will have to be encouraged, and systems will have to increase their capacity for continuous reform in the direction of relevance to development.

Continuing mutual adjustments of educational efforts, economic development programmes, and manpower institutions will be necessary if education is to realize its potential. "And whereas the hallmark of the last decade of educational development was quantitative expansion, the hallmark of the next one must be major selective growth accompanied by greater adaptation, change and innovation, all of it reinforced by even greater international co-operation."(1)

(1) Educational Planning, A World Survey of Problems and Prospects, Unesco, 1970, page 23.